whether they shall be able wholly to accomplish the object they have in view, much depends on the assistance they may receive from the public.

[*Monthly Magazine.*]

A patent Metallic Life Boat, on pneumatic and hydrostatic principles, that will neither sink nor overset, yet serve all the ordinary purposes of ships' boats, either for rowing or sailing, was tried lately near London-bridge. It was the ebb tide, during the time of the greatest fall, and she had her crew on board, and was filled with water. She passed through with the greatest safety, and discharged a considerable portion of the water which had been purposely put into her. This Life-boat is made of malleable iron, lead, and tin, twenty feet long, and six feet wide, and draws only ten inches of water, with twenty-five persons. They possess valves, that without pumping, or personal aid, discharge all the water from them, which valves act occasionally as pneumatic, or air valves; they are hydrostatically ballasted with confined water, taken in or put out at pleasure; and are remarkably buoyant and lively in agitated water. It is the invention of Mr. Dodd, the engineer.

[*Monthly Magazine.*]

Oxy-muriatic acid used to guard against infection of close air, and marsh miasmata.

Messrs. Thenard and Cluzel being sent to Flushing to direct the means of health, they ordered earthen vessels to be placed in the apartments for the soldiers, as well as those where prisoners were confined; these were filled with oxy-muriatic acid, greatly diluted with water, and they obliged every man employed on the fortifications to dip his hands into one of the vessels every morning before he went out to his work. They placed similar vessels in the ditches of stinking mud, so that, from these and the fumigations employed, the workmen were immersed day and night in an atmosphere of oxy-muriatic acid, and preserved their health. It further appears, that many of the prisoners infected with the itch soon experienced the good effects of this immersion of their hands in diluted oxy-muriatic acid. One who had the disease all over him in an inveterate degree, and that had resisted every application, requested permission to wet rags in the bowls, and rub his body with them, and by so doing was perfectly cured in a few days.

[*Monthly Magazine.*]

REAPING MACHINE.

The Committee of the Dalkeith Farming Club, and a numerous concourse of spectators, lately assembled at the farm of Smeaton, near Dalkeith, to witness the competition for the premium of £.500, offered by the Club to any inventor of a reaping machine, capable of cutting down two acres of corn in the period of 5 hours, with one or two horses, and two men. Several competitors were expected, but only one appeared, Mr. Smith, of the Deanstoun works, near Dome, Perthshire, who exhibited a machine of great elegance and simplicity, impelled by one horse moving behind, while the action of the axle puts in rapid motion, at the opposite end of the machine, a drum, with a circular cutter affixed to it. By the movement of the drum, the cut grain is laid in a row, and the machine is so constructed, that the drum can, at pleasure, revolve towards the one or the other side, so as both are going and returning along the ridge, to throw the grain towards the open side of the

field. The machine possesses great force, cutting a breadth of four feet at a time. The cutter can, at pleasure, be placed nearer to, or farther from the ground, and on a smooth and level field, it can be made to cut at any degree of closeness to the ground which may be desired.

SPONTANEOUS IGNITION.

The frequent accidents by fire in manufactories, have excited the attention of scientific men. By two papers published on this subject, one in the New-York Medical Repository, by Dr. Seybert, and Dr. Coxe, Professor of Chemistry, it appears, that a multitude of substances are capable of spontaneous inflammation, and that others evolve gaseous fluids, which suddenly inflame on the approach of fire. Among the articles mentioned by Dr. Seybert, are the following:

Candle-wick of hemp-yarn, accidently impregnated with oil.

Cotton goods, on which linseed-oil has been spilled.

Roasted bran in a linen-cloth.

Wet hay, corn, and madder; especially if any portion of iron should be intermixed.

Sail-cloth, smeared with oil and ochre.

New cloth, and fire-wood soot immersed in hemp-oil varnish.

German lamp-black.

Vegetables boiled in oil or fat, and left to themselves, after being pressed.

Heaps of linen-rags in paper manufactories.

Pyrites, and cinders from the furnace of glass-works, when exposed to a moist atmosphere.

Cuttings of iron, which had been previously immersed in water.

Paint made of Derbyshire woad.

Specification of the Patent granted to John Justice, of Dundee, in North Britain, Ironmonger; for an improvement in the construction of stove-grates, calculated to prevent or cure smoky chimnies, and possessing other advantages over the stove grates in common use.

Dated March 6, 1810.

To all to whom these presents shall come, &c. Now know ye, that in compliance with the said proviso, I the said John Justice, do hereby declare, that the nature of my said invention is described in manner following; that is to say, The stove grates of my improved construction are in appearance similar to the register stoves in common use, but with the following additional conveniences or improvements. The grate, or that part which contains the fire, instead of being fixed and immoveable in its place between the outside cheeks, as in the stove grates or register stoves in common use, is moveable upwards or downwards between the outside cheeks, so that it may be lowered or sunk down even to the hearth when this is desirable, as where wood or turf is the fuel principally to be employed, or may be raised or wound up to any height desirable, and at the same time suitable to the inside opening of the front, presenting in this power of being moved and placed at any required height, the great advantage of enabling the possessor so to adjust it, as to cure, or altogether prevent, that evil so very generally complained of, commonly called a smoky chimney; for in most cases of smoky chimnies, the evil, as is well known to mechanics, may be remedied by bringing the top or lintel of the chimney down to some certain distance from the grate, which shall be found to occasion